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ABSTRACT

The primary purpose of this bibliography is to stimulate active communication of research needs and findings among researchers, practitioners, and policy-makers concerned with adult functional literacy. By topically arranging and briefly annotating significant research articles on functional literacy, this Guide introduces some of the major issues in literacy research. Generally, articles are non-technical so as to make research accessible to the non-specialist. The Guide is divided into five major chapters, each focusing on a specific topic: Literacy Policy: Definitions and Measurements: Adult Literacy Education, Determining Literacy Requirements, and, Consequences of Literacy. The chapters begin with brief overviews of major issues, Articles and books are then cited and annotated, describing how material covered in each selection fits into the topical focus of the chapter. (Author/GSK)

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A BIBLIOGRAPHIC GUIDE TO FUNCTIONAL LITERACY

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Northwest Regional Educational Laboratory

A BIBLIOGRAPHIC GUIDE TO FUNCTIONAL LITERACY

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November, 1979

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ABOUT THE BIBLIOGRAPHIC GUIDE

In recent years public attention has focused increasingly on literacy skills as part of the growing educational accountability movement. Numerous surveys and studies report widespread functional illiteracy among American adults, including large numbers of recent high school graduates. Most reports conclude that millions of American adults are unable to deal effectively with the written materials encountered in daily life, thus removing them from ready access to higher education, professional jobs, or many of society's cultural and economic resources. Such reports have naturally prompted widespread concern over the apparent wastage of human potential and have stimulated criticism of convenient scapegoats: schools (for failing to make all students functionally literate), media such as television and telephone (for undermining the communicative and recreational value of writing), and a variety of social conditions themselves (e.g., poverty, multiculturalism, etc.).

Despite the urgency with which these concerns are voiced and the popularity of some "explanations" (e.g., blaming television), there is a dearth of relevant scientific information presently available about adult literacy in the United States. Published reports about various aspects of illiteracy abound, including numerous estimates and demographic breakdowns of adult illiteracy rates. And there is no shortage of discussions of why such a literacy "problem" exists among American adults or of what should be done about it. Naturally, educators attend closely to such discussions, but there is considerable feeling that the right kind of research has not yet been carried out. Too little research conducted to date has seriously examined the critical assumptions underlying current

literacy objectives, definitions of adult literacy, or methods of measuring it. Too often, explanations of ways to promote literacy fail to consider its complex relationships with other social, cultural, and economic institutions.

Unfortunately, what little serious effort has been devoted to such critical reflection on literacy has not been widely disseminated. Researchers in several disciplines--history, anthropology, sociology, linguistics, and psychology, to name a few--have made important scholarly contributions to the study of literacy, but too often their reports are unfamiliar or inaccessible to practitioners. At the same time, too little information has flowed in the other direction. Literacy educators, through their extensive first-hand experiences, represent an invaluable source of knowledge and expertise, which, if tapped successfully, could significantly improve the research efforts of their more academic colleagues. Practitioners' direct contact with the literacy needs and skills of American adults provides a unique vantage point for directing research to significant practical concerns and for disseminating and incorporating research findings into new educational practices.

The primary purpose of this bibliography, then, is to stimulate more active communication of research needs and findings among researchers, practitioners, and policy-makers concerned with adult functional literacy. By topically arranging and briefly annotating significant research articles on functional literacy, this Bibliographic Guide introduces some of the major issues in literacy research. Articles have been selected, whenever possible, which are non-technical in exposition, in order to make the research accessible to the non-specialist. Articles of interest to researchers from various disciplines have been included, too, to introduce them to the issues and current research in functional literacy.

Several major areas of research have not been included here, notably research on adult learning and pedagogical techniques for adult literacy education. These are, of course, critical topics for practitioners. But we do not feel that the empirical literature in these areas is sufficiently well organized to permit a useful synthesis at this time. The Hunter and Harman (1979) volume contains some bibliographic data to which we refer readers interested in these topics.

We would like to thank William Griffith, Eugene Radwin and Janet Ovitz for carefully reading a preliminary draft of this Guide and for their many helpful suggestions.

We plan to revise and update the Bibliographic Guide from time to time. In order to improve this Guide, we need your feedback. We want to know how to make the Guide more useful to you. Let us know how it could better serve your informational, research, or practical needs. A postpaid mailer for your comments and suggestions is provided at the end of this document.

ORGANIZATION OF THE GUIDE

The Guide is divided into five major chapters. Each chapter focuses on a specific topic or set of issues in functional literacy, beginning with a brief overview of the major issues and key references. Selected articles and books are then cited and annotated, describing how material covered in each selection fits into the chapter's topical focus. Some annotations thus do not cover the full scope of an entry. In some cases, a selection is annotated differently in various chapters.

Articles included in each chapter are of several types--some are recommended as general introductions to the issues in question, others are recommended for their coverage of particular aspects of the material, and other sources are listed at the end of each chapter as additional materials for interested readers. Many excellent references are not included here because their coverage of the material is too technical or is already dealt with in other references. The interested reader, of course, will soon discover that these additional sources are cited in the primary articles--the Guide provides only a scent of the trail which can be picked up and followed back into the literature.

I. LITERACY POLICY: A SENSE OF URGENCY

Introduction

As the 1960s drew to a close, increasing demands for social and educational equity were being pressed in a number of realms. New calls were voiced for universal adult literacy in American society. Literacy was widely perceived by social planners as an indispensible asset for both individual and societal development. A sense of urgency prompted the cry, heralded by the former U.S. Commissioner of Education, the late James E. Allen, for an all-out attack on illiteracy. Allen proposed a massive ten-year effort, termed the Right-to-Read project, to eradicate illiteracy in America. Comparable in scope and expense to the earlier Man-on-the-Moon project, the proposed Right-to-Read effort never became national policy. But a number of initial steps were taken, including the creation of a task force by the National Academy of Education to consider how the effort could be successfully implemented.

That task force, the Committee on Reading, produced a report and a series of commissioned papers, which together were published as a volume entitled Toward a Literate Society. The volume, edited by Carroll and Chall, is the lead-off reference in this Guide because the central question it addresses--"how to bring about universal adult literacy in American Society"--leads to a number of critical issues around which this Guide is organized.

Carroll, J. B., & Chall, J. S. (Eds.). Toward a literate society: A report from the National Academy of Education. New York: McGraw-Hill Book Company, 1975.

These papers, commissioned by the Committee on Reading task force, cover a variety of selected topics on literacy and literacy

education in the United States. Several of these articles consider formulating literacy objectives as part of social policy. The article by Natalie Saxe and Richard de Lone ("Political Implications of a National Reading Effort") considers the political realities that a national literacy campaign will face. They properly question how large a claim can be staked by a national literacy effort on the limited funds available for social programs. The answer depends on the priority assigned to literacy in relation to other social objectives and on the cost of implementing a successful literacy effort. Further economic and financial perspectives on implementing literacy programs are provided by Oliver Brown and Guilbert Hentschke in their article ("An Economic and Financial Perspective on a National Ten-year Reading Effort").

Other commissioned papers consider additional practical aspects of a major literacy campaign. Bormuth's article ("Reading Literacy: Its Definition and Assessment") discusses the conceptual and methodological issues involved in defining and measuring functional literacy. Weber's article ("Adult Illiteracy in the United States") and the article by Ryan and Furlong ("Literacy Programs in Industry, the Armed Forces, and Penal Institutions") focus on issues in adult literacy. Other articles in the volume focus primarily on aspects of developing literacy for children in school.

Olson, D. R. Review of Toward a literate society, edited by J. B. Carroll & J. S. Chall. Proceedings of the National Academy of Education, 1975, 2, 109-178.

In this essay, Olson challenges the main objective of the Right-to-Read enterprise, "ensuring that every person arriving at adulthood will be able to read and understand the whole spectrum of printed materials that one is likely to encounter in daily life." Olson invites us to consider whether a goal of universal adult functional literacy is valid—let alone practically attainable in a short period of time. Olson raises the central question: Why was such a goal established in the first place? To answer this question, he examines the historical role of literacy in the development of Western civilization and its critical relationship to Western schooling. Olson argues that historically conditioned social values and norms for literacy may not be related to the personal and social benefits which might result today from achieving full adult literacy. Although literacy has undoubtedly played a decisive role in the development of Western civilization, it does not necessarily follow that attainment of universal literacy--at any price—in contemporary American society will continue to spark significant developments. In order to fit literacy objectives properly into our complex social and educational priorities, we must first determine the psychological and social consequences of literacy and illiteracy in contemporary society.

Several issues discussed in Olson's review of the Carroll and Chall volume are critical for literacy policy. The remainder of this Bibliographic Guide is organized around some of these issues. Historical

studies of literacy and literacy education add considerable perspective to the contemporary societal context of literacy. Several articles serve as departure points to that literature--these are cited and annotated below in this chapter of the Guide. Subsequent chapters present references dealing with issues identified in the Carroll & Chall and Olson discussions. If we are to strive for expanded functional literacy, we need a clear conception of what functional literacy is and how to measure it. Unfortunately, no consensus exists. Alternate approaches to defining and measuring functional literacy are discussed in the references annotated in Chapter II. We further need to know about the programmatic options for adult functional literacy education. References presented in Chapter III consider some alternative instructional approaches to functional literacy. Beyond choosing an instructional approach, we need to know what the functional literacy requirements are for adults in our society--but how can we determine appropriate target levels of functional literacy? References annotated in Chapter IV address the problems of determining the literacy requirements of various occupational and social activities.

Leaving aside the many difficulties of specifying the literacy requirements of specific activities, we need to know what levels of functional literacy should be taught? This is a prescriptive matter, one which entails value judgments about literacy. How important is literacy --what should its role be in our society? To minimize the arbitrariness of such judgments and associated educational prescriptions, more knowledge is needed about the consequences of literacy and illiteracy.

Although literacy once seemed indispensible as a medium of education and communication, increasing reliance on other media (e.g., television, film, telephone) may well diminish the importance of writing. On the

other hand, as Olson and others point out, many people believe that literacy is uniquely associated with critical social, economic and intellectual advances. Abstract thought, for example, is popularly thought to be tied to literacy. Empirical verification of such claims is highly problematic. Attempts to identify such effects of literacy are reviewed in material presented in Chapter V.

Literacy and the Schools

Concern about adult illiteracy naturally focuses on adults who are not presently literate. But recent studies indicate that, in addition to the millions of American adults who are not functionally literate, many adolescent school-leavers—including recent high school graduates--are functionally illiterate. Predictably, the schools are blamed by some for these problems. Statistics showing declines in student reading achievement, scholastic aptitude, and other standardized test scores add grist to the mills of criticism directed at the schools. Naturally, the schools have their defenders as well as their critics. The Copperman volume, examining the alleged decline in literacy, finds the school system at fault. The Fisher book, on the other hand, re-analyzes some of the same data, and concludes that the schools may not be failing, contrary to popular belief.

Although the actual effectiveness of the schools' literacy instruction is difficult to assess, demands for increased educational accountability have swept the nation. In many states, high school graduation will soon require some formal certification of functional literacy. Although the use of standardized tests to determine who graduates has strong popular appeal, it carries serious ethical and legal implications. The Lewis article provides a thoughtful review of the

legal and ethical issues involved in certifying functional literacy. He concludes that attempts to place functional literacy tests into a gatekeeping role may be inherently illegal and indefensible on ethical grounds.

Copperman, P. The literacy hoax: The decline of reading, writing, and learning in the public schools and what we can do about it. New York: William Morrow and Co., 1978.

Copperman reviews historical trends in American schooling and literacy, in an attempt to link recent changes in educational philosophy and practice with declining effectiveness of instruction in basic skills. Shown against the historical backdrop of steady rises in students' literacy skills from 1800 to the mid-1960s, the recent decline in basic skills achievement, scholastic aptitude and other indicators of literacy seems very dramatic indeed. The decline is then blamed on a number of changes in public education during the late 1960s and 1970s, all of which allegedly distracted education from its essential instructional objectives. Among the factors mentioned are: open classrooms, liberalized curricula, less assigned homework, declining academic standards, compensatory education, and the falling prestige and authority of teachers.

All such attempts to tie changing educational outcomes to shifts in social and educational philosophy are bound to be highly controversial. This volume is no exception. The types of correlations Copperman attempts to establish in sweeping, general terms are at best highly suggestive. But they do not establish the strong conclusions he wants to draw. Nevertheless his argument is a popular one and researchers, teachers and policy-makers should be familiar with it.

Fisher, D. L. Functional literacy and the schools. Washington, D. C.: National Institute of Education, 1978.

Like the Copperman volume, the chief concern of this monograph is to assess the effectiveness of the schools' literacy training. Fisher reviews the major studies of adult literacy, re-analyzes their data, and argues that there is little evidence to support the popular contentions that schools are failing to provide effective literacy instruction. He disputes the claims of those--such as Copperman--who would argue that recent educational reform has had a negative impact on literacy rates.

Lewis, D. L. Certifying functional literacy: Competency testing and implications for due process and equal educational opportunity. Journal of Law and Education, 1979, 8, 145-183.

This article offers a thorough, somewhat technical but highly readable review of the legal issues involved in certification of functional literacy as a high school graduation requirement. The

article begins by considering the trend towards using standardized tests to determine who does or does not graduate from high school, which is seen as a response to the "back to basics" movement and a means to restore confidence in the diploma. Despite the apparent popular appeal of competency based graduation requirements, they carry serious legal implications. In weighing these issues, the author examines recent innovations in competency testing practices from several perspectives: Educational accountability, due process, and racial discrimination. Lewis reviews the relevant constitutional and legislative issues, the legal challenges and the pattern of judicial decisions made in recent cases involving competency based graduation requirements.

Although Lewis sees a place for proficiency testing in designing long-range educational plans for individuals, he concludes that "competency based graduation requirements offer the individual little more than a choice of labels to carry into adulthood." The chief harm is to the individual's ability "to prove the school system wrong--to demonstrate his own capabilities to function as a worker and citizen." The use of such labeling may well jeopardize our commitments to social and economic equality.

Although the debate continues between proponents of these contrasting views, there is little hope for resolving these issues without additional perspective on literacy matters in the U.S. Consideration of a few key questions may provide some of the needed perspective: Just what is functional literacy? How can it be measured? How much of it should there be? How can it best be taught? References annotated in subsequent chapters address some of these topics. But the most immediate perspective on contemporary literacy is a historical one; how have literacy rates, policies, and practices developed over time to become what they are today? The next section considers a few historically oriented discussions of literacy.

Historical Context of Literacy Policy

To understand better how Western societies (including our own) have come to value literacy so highly, some acquaintance with the historical development of literacy in the West is helpful. The role of literacy in the general development of Western society and education is well covered

in the essays by Havelock and by Goody and Watt. The Resnicks' article and the Cook and Robinson volumes provide valuable perspectives on the more immediate historical context of contemporary literacy education in the United States.

Havelock, E. A. Origins of Western literacy. Toronto: The Ontario Institute for Studies in Education, 1976.

Drawing on his previous analyses of Greek literacy, Havelock traces the roots of Western literacy back to the Greeks' invention and use of alphabetic writing. Havelock focuses on the personal and cultural impact of widespread literacy which reached the "take off" point once the writing system was sufficiently facile for individuals to read and learn new information directly from written materials. Once literacy reached this stage of development, radical changes took place in human communication, education, and culture in general.

Goody, J., & Watt, I. The consequences of literacy. Comparative Studies in Society and History, 1963, 5, 304-345. Reprinted in J. Goody (Ed.), Literacy in traditional societies. Cambridge: Cambridge University Press, 1968.

This seminal article considers the impact of literacy on the development of the intellect and the general social order. The authors give special attention to the case of classical Greece, the first major society to develop popular literacy (allegedly due to their invention of the alphabet). Of the many social and psychological changes brought about by literacy, Goody and Watt consider two to be of utmost importance: logic and history. They argue that writing made possible these modes of thought and inquiry and led to profound changes in the intellectual and social character of subsequent Western cultures. Through a largely speculative analysis, Goody and Watt eloquently trace the critical role of writing in the development of Western civilization and lay bare the origins of contemporary beliefs that literacy can bring about massive social change.

Resnick, D. P., & Resnick, L. B. The nature of literacy: An historical explanation. Harvard Educational Review, 1977, 47(3), 370-385.

This article brings a historical perspective to contemporary expectations for universal adult literacy. From a historical examination of selected European and American models of literacy education, the Resnicks suggest that literacy instruction in the past has been aimed at achieving either a low level of literacy for a large number of people or a high level for an elite. Seen in this perspective, present calls for high levels of literacy for the entire population represent a relatively recent and unprecedented educational objective. The authors suggest that new instructional models--rather than reinstated "back to basics"--are needed for attaining this contemporary literacy objective.

Cook, W. D. Adult literacy education in the United States. Newark, DE: International Reading Association, 1977.

Cook offers an excellent historical treatment of adult literacy education in the United States from 1900 until the present. The development of adult literacy education is traced on a decade-by-decade basis. For each decade, Cook provides a brief but penetrating commentary on the general social climate and demographic characteristics of American adults, indicating their effects on education in general and on adult literacy education in particular. The changing social context of illiteracy is clearly visible in this account, as are the varying national priorities to which adult literacy has been tied: Americanization and citizenship training, military mobilization, New Deal objectives, and concerns for social and economic equity. This historical patchwork of contexts of literacy in the United States provides a valuable perspective on the contemporary patterns of adult literacy and illiteracy found in the United States. Adult literacy educators should be particularly interested in Cook's material on the historical development of their profession in the United States.

Robinson, H. A. (Ed.). Reading and writing instruction in the United States: Historical trends. Newark, DE and Urbana, IL: International Reading Association and ERIC Clearinghouse on Reading and Communication Skills, 1977.

This anthology focuses on the historical development of literacy instruction in American public education. The common thread running through the volume is stated succinctly in Messerli's forward: "Historical ignorance is the mother of 'educational innovation.'" This volume provides an opportunity for teachers, researchers, and policy-makers to become familiar with trends in research and instruction in reading and writing over the years. Although the book does not focus on adult literacy education, there are close historical parallels between public school and adult literacy instruction. These articles broaden the coverage of the historical context of adult literacy provided by Cook's volume.

Additional Readings

Cipolla, C. M. Literacy and development in the West. London: Penguin Books, 1969.

Disch, R. (Ed.). The future of literacy. Englewood Cliffs, N.J.: Prentice-Hall, 1973.

Havelock, E. A. Preface to Plato. Cambridge, MA: Harvard University Press, 1963.

An historical perspective: The Adult Education Act, 1964-1974. Washington, D.C.: National Advisory Council on Adult Education, 1976.

Lockridge, K. Literacy in Colonial New England: An inquiry into the social context of literacy in the early modern West. New York: Norton, 1974.

Ong, S. J. Rhetoric, romance, and technology. Ithaca: Cornell University Press, 1971.

II. DEFINITIONS AND MEASUREMENTS: A LACK OF CONSENSUS

Introduction

In his proclamation for International Literacy Day, President Carter stated that "Every illiterate adult is an indictment to us all." Results of national surveys conducted over the last ten years, estimating that 1 to 20 percent of the U.S. adult population are functionally illiterate, have led some to question the quality of education in U.S. schools. However, the impact of these criticisms is attenuated by the lack of consensus on the meaning of being functionally literate. Until functional literacy is defined, it cannot be measured. This chapter considers the reasons for the confusion and disparity among reports of functional illiteracy rates that have made national headlines and alarmed so many.

One difficulty in determining who is functionally literate or illiterate is the diversity of definitions that have been applied to the terms--both conceptually and operationally. Another problem is the wide variety of assessment techniques and performance criteria used to measure functional literacy. To enable the reader to sort through the voluminous material written about functional literacy, references cited in this chapter are considered in three groups: (1) major technical studies, (2) reviews and critiques of major studies, and (3) reviews and critiques of alternative definitions and measurement methods.

Included in this chapter are several overview articles--namely, those by John Bormuth, David Harman, and Lawrence Smith--that highlight these problems and examine the issues involved and the benefits and limitations of using various definitions of functional literacy.

Major Technical Studies

This section presents reports and articles covering major studies that have operationalized various definitions of functional literacy in order to measure it within the U.S. Each study attempted to assess functional literacy within the framework of a specific definition. Although their importance as initial attempts to define and assess functional literacy cannot be denied, many questions have arisen regarding the validity of several studies.

Louis Harris and Associates, Inc. Survival Literacy Study (conducted for The National Reading Council). New York: Louis Harris and Associates, Inc., 1970.

This study broke new ground in the assessment of literacy by presenting a facsimile of "real-life" situations to test adult reading competency. Defining literacy as "the ability to respond to practical tasks of daily life," the study tested a national sample of American adults on their ability to respond to questions on long-distance dialing directions, on classified employment and housing advertisements, and on completing a variety of application forms. The study concluded that 4 percent of Americans 16 years and older have a serious deficiency in functional reading ability. The results were analyzed by respondents' age, geographical region, ethnic background, income, and educational attainment.

Sharon, A. T. Reading activities of American adults. Princeton, NJ: Educational Testing Service, 1972.

The first phase of a project designed to measure adult functional reading, this report gives the results of a large interview survey developed to determine adult reading habits. Participants were asked to state, on a daily basis, what they read, how much time was spent reading, and how important they viewed the content of what they read. Results were analyzed in terms of a variety of demographic variables. It was determined that reading was an ubiquitous activity for U.S. adults, and that on the average, two hours were spent reading daily. Those adults who could not read "coped" by locating someone to read to them.

Murphy, R. T. Adult Functional Reading Study, final report (Project I: Targeted Research & Development Reading Program Objective, Sub-parts 1, 2, and 3). Princeton, NJ: Educational Testing Service, 1973.

Defining competency as "those skills suitable for adequate functioning in normal day-to-day living," this study attempted to assess adult functional reading competence on everyday reading tasks. The instrument items were based on a national interview survey which

asked adults about their daily reading habits (see Sharon, 1972 & 1973-74). The study concluded that most U.S. adults 16 and over were able to perform tasks based on day-to-day activities. However, the significance of these findings is uncertain since no standards are available for evaluating individuals' performance.

Gadway, C. J., & Wilson, H. A. Statistical/documentary report, 1974 and 1975 assessments of 17-year-old students, summary volume. Denver, CO: National Assessment of Educational Progress, 1976.

The Mini-Assessment of Functional Literacy (MAFL) was given to a national sample of 17-year-olds in 1974, using exercises based on reading materials frequently encountered in everyday life. The MAFL was an improvement over previous attempts to measure functional literacy for several reasons: (1) test exercises were representative of a broad range of reading tasks frequently encountered, (2) performance results were categorized in terms of several item formats and behavioral response categories, and (3) results were reported in relation to three different standards of functional literacy. Based on the criterion levels set by the National Assessment of Educational Progress and the National Right to Read Council, 13 percent of the sample were termed functionally illiterate.

Sticht, T. G. (Ed.). Reading for working: A functional literacy anthology. Alexandria, VA: Human Resources Research Organization, 1975. (a)

Part 1 of this anthology discusses the Human Resources Research Organization's work in attempting to define functional literacy in terms of job-related reading demands. Presentations include an overview of research findings and the four methodologies used to determine the reading requirements of various occupations. Relationships among the difficulty of job-related reading materials, job-related reading proficiency, and job performance are also explored.

Northcutt, N. Adult Performance Level Project: Adult functional competency: A report to the Office of Education Dissemination Review Panel. Austin: University of Texas, Division of Extension, 1975. (a)

The Adult Performance Level Project (APL) was a major study designed to "specify the competencies which are functional to economic and educational success in today's society and to develop devices for assessing those competencies in the adult population of the U.S." The APL Project defined functional competency (a broader construct than functional literacy) as the application of a set of four skills to a set of five content areas. Test items for each skill-by-content area combination were selected in terms of their ability to discriminate "successful" American adults (operationally, those with relatively high levels of income, education, and occupational prestige) from non-"successful" adults. Although this study has been widely disseminated among adult educators and has been the basis for recent curriculum developments, many question the measures used to assess competency and the indicators of "success" used in the survey (e.g., Griffith and Cervero, 1977).

Reviews and Critiques of Major Studies

The articles in this section critically examine some of the major studies that have estimated functional illiteracy rates. These articles merit a special section because they illustrate the variety of ways that the data collected in the surveys can be interpreted. Many of these articles question the validity of the studies not only in terms of how the data were interpreted, but how the samples were selected and the performance criteria were established.

Caughran, A., & Lindlof, J. Should the "Survival Literacy Study" survive? Journal of Reading, 1972, 15(6), 429-435.

This article questions the findings of the Survival Literacy Study conducted in 1970 (see Harris, 1970). Concentrating solely on the application form completion task of the survey, Caughran and Lindlof contend that some of the conclusions reached by Harris and Associates were erroneous for a variety of reasons: The average percentages used to derive general tendencies of the population were inaccurate and misleading; the use of altered forms limited the ability to predict performance on unaltered applications; and the survey did not have sound data bases. The article points to the necessity of examining results before their blanket acceptance, a problem common to many surveys of this type.

Sharon, A. T. What do adults read? Reading Research Quarterly, 1973-74, 9(2), 148-169.

Based on the premise that we cannot define or measure literacy until we know exactly what people read, this article summarizes the results of a national survey conducted to determine characteristics of adult reading habits (see Sharon, 1972). The study was one of the first major surveys that looked at the role and importance of literacy and reading in the context of everyday activities.

Murphy, R. T. Assessment of adult reading competence. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education (Perspectives in Reading No. 19). Newark, DE: International Reading Association, 1975.

The author presents a summary of the Adult Functional Reading Study (see Murphy, 1973) conducted to determine (1) reading habits of U.S. adults and (2) assessment of functional reading skills based on daily reading tasks. Murphy points out the importance of determining characteristics of the actual reading tasks in which adults engage before attempting to assess functional literacy. While the study did not provide standards for measuring functional literacy, it does provide data for future research in the area.

Ahman, J. S. An exploration of survival levels of achievement by means of assessment techniques. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education (Perspectives in Reading No. 19). Newark, DE: International Reading Association, 1975.

The author looks at the problems of measuring functional literacy without a set definition. Components of a definition that need further research and examination are discussed. A matrix for developing an index of skills necessary for functional literacy is presented as well as an outline of the problems associated with defining functional literacy in this manner.

Sticht, T. G., & McFann, H. H. Reading requirements for career entry. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education (Perspectives in Reading No. 19). Newark, DE: International Reading Association, 1975. (b)

This article examines the concept of functional literacy in terms of the literacy requirements of certain occupations. Once the reading demands of various jobs are known, schools will be better able to help students develop the reading skills needed in various career fields. Several methods to determine the literacy demands of certain occupations are reviewed, taken from the earlier work of Sticht and colleagues (see Sticht, 1975a).

Nafziger, D., Thompson, R. B., Hiscox, M. D., & Owen, T. R. Tests of functional adult literacy: An evaluation of currently available instruments. Portland, OR: Northwest Regional Educational Laboratory, 1975.

The authors critically review and examine tests that are currently used to assess adult functional literacy. The instruments are evaluated in terms of four general criteria: measurement validity, examinee appropriateness, technical excellence, and administrative usability. Explanations for the test rating system are also presented. The introduction describes the problems in defining and measuring functional literacy by reviewing various definitions and discussing the difficulties of choosing what "real-life" tasks should be measured. None of the commercially available instruments were generally satisfactory in terms of the established criteria.

Northcutt, N. W. Functional literacy for adults. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education (Perspectives in Reading No. 19). Newark, DE: International Reading Association, 1975. (b)

The author summarizes the Adult Perfomance Level Project (see Northcutt, 1975a), conducted to assess functional competency among U.S. adults and describes the theoretical framework the project used to study functional competency. The research methodology used to collect and interpret the data and selected survey results are presented. The article concludes that many more U.S. adults are functionally incompetent than originally believed.

Coles, G. A. U.S. literacy statistics: How to succeed with hardly trying. Literacy Work, 1976, 5(2), 47-70.

This article looks critically at the quality and use of census and Adult Basic Education statistics to derive estimates of illiteracy in the U.S. The various definitions of literacy and functional literacy used in surveys are considered. The author demonstrates how such figures can be used to inflate or deflate the extent of the illiteracy problem, depending upon the population surveyed, the approach used to obtain estimates, and the assumptions made about those who have left the "illiterate" category.

Acland, H. If reading scores are irrelevant, do we have anything better? Educational Technology, 1976, 16(7), 25-29.

This article examines the results of the Adult Performance Level test of functional literacy (see Northcutt, 1975a & b) from two different angles: (1) people do not face the same real-world problems and (2) there are a variety of ways to solve a problem. Citing examples from the test (using airplane guides, driving, and filling out various forms), the author contends that results of the APL study do not take into account surveys of actual use of written materials in everyday life, and that by interpreting the scores differently, white upper-class students appear to be in the most trouble. Recommendations are given either to modify existing tests or to develop a more generally applicable test.

Fisher, D. L. Functional literacy and the schools. Washington, DC: National Institute of Education, 1978.

This monograph includes a valuable appendix which concisely describes the major studies which have been conducted to assess illiteracy in the U.S. and the methods each has used. In the text, the data collected from the surveys are re-analyzed and re-interpreted to show that such claims are misleading. The author defends schools against charges that they are responsible for graduating thousands of functional illiterates identified in reports of national literacy surveys.

Griffith, W. S., & Cervero, R. M. The Adult Performance Level Program: A serious and deliberate examination. Adult Education, 1977, 27(4), 209-224.

This article examines the claims of the developers of the Adult Performance Level Project (see Northcutt, 1975a & b). The authors raise a number of technical problems with the assessment and measurement procedures used. More importantly, theoretical problems with the initial research approach that have been overlooked previously are examined. Several proclaimed "results" of the APL Project, on close examination, turn out to be initial assumptions made about the nature of "functional competence" and "success," which have no established empirical or theoretical validity. Especially important are hidden value judgments inherent in the APL framework that are often unnoticed by disseminators and proponents of the approach.

Reviews and Critiques of Various Definitions and Measurement Methods

The majority of articles in this section review the literature and critique the definitions and measurement methods that have been applied to functional literacy. Representing a variety of viewpoints, these articles examine the conceptual issues encountered in selecting a definition, the benefits and limitations of the various definitions and the problems which arise in their application to measurement. Articles cited here provide the reader with an understanding of the complexities of defining and measuring functional literacy.

Bormuth, J. R. Reading literacy: Its definition and assessment. Reading Research Quarterly, 1973-74, 9(1), 7-66. A revised and abridged version was subsequently published in J. B. Carroll & J. S. Chall (Eds.), Toward a literate society. New York: McGraw-Hill Book Co., 1975.

This monograph presents a thorough discussion of the concept of literacy, oriented towards assessment and measurement issues. The analysis of literacy focuses on identifying the parameters which must be specified in any definition of literacy. Corresponding measurement issues and available literacy assessment procedures are described. The author is refreshingly aware that literacy cannot be parameterized only in terms of certain characteristics of the people being treated--performance depends critically on the characteristics of the written materials and the reading tasks.

Breedlove, W. Illiteracy in the United States: Definitions and statistics. Notes on Adult Education, 1976, 1(2:2).

This article is a lay-oriented review of the historical sources of terms such as functional competency, survival skills and coping skills. The author presents the standard definitions of illiteracy, difficulties involved in determining the extent of illiteracy in the U.S., and the consequences of using these definitions for measurement of literacy.

Carp, A. The reading problem in the U. S. In R. Corder (Ed.), The information base for reading: A critical review of the information base for current assumptions regarding the status of instruction and achievement in reading in the United States. Berkeley, CA: Educational Testing Service, 1971. (ERIC Document Reproduction Service No. ED 054 922)

In this chapter, the author summarizes and critiques norm-referenced and early criterion-referenced measurement of literacy up to 1971. Demographic analysis of census literacy estimates of

functional literacy as measured by grade level attainment, and of functional literacy as measured by tests, are considered. Recommendations are presented on how future tests should be developed.

Harman, D. Illiteracy: An overview. Harvard Educational Review, 1970, 40(2), 226-243.

The author reviews current definitions of illiteracy and functional illiteracy and discusses their relationship to estimates of the extent of illiteracy and to literacy education. Although the article is somewhat dated, Harman's anticipation of the need to measure literacy in relation to the functional requisites of particular societies is noteworthy. He argues that adult basic education efforts here and abroad should be planned on a situation-specific basis, with goals, content, and evaluative components derived independently of the usual grade school equivalencies.

Hunter, C., with D. Harman. Adult literacy in the United States. New York: McGraw Hill Book Co., 1979.

Much of the material in this volume updates and elaborates on the earlier Harman (1970) article. Here we consider just the first two chapters. In Chapter I of this volume, Hunter and Harman differentiate two types of literacy: conventional and functional literacy. Conventional literacy is defined as the "ability to read, write and comprehend texts on familiar subjects and to understand whatever signs, labels, instructions and directions are necessary to get along in one's environment." Functional literacy is "the possession of skills perceived as necessary by particular persons and groups to fulfill their own self-determined objectives as family and community members, citizens, job-holders..." This definition includes the ability to gain access to information they may want to use.

In Chapter II, the authors examine demographic data in an effort to delineate the illiterate population of the United States. For this purpose they take high school graduation as the criterion of literacy. Although this is in many ways an arbitrary and inappropriate measure, there is abundant data on high school completion. They then characterize the illiterate American population in terms of several social and economic variables. They indicate that although the exact number of illiterates is not known, and although more individuals are completing high school and achieving "acceptable" levels of literacy, well over one third of the adult population suffers some educational disadvantage. Hunter and Harman stress that the constantly changing concept of what constitutes adult literacy reflects underlying changes occurring in other sectors of society. Literacy must be characterized in terms of its rich social and economic context.

Karlsen, B. Methods of large scale literacy assessment. Literacy Discussion, 1973, 4(3), 158-171.

After distinguishing literacy from functional literacy, the author reviews the three main large-scale methods used to assess functional literacy: the literacy rate approach, the behavioral

objectives approach, and the normative approach. The advantages and limitations of each approach are discussed. Major U.S. literacy surveys which used each approach are reviewed.

Kirsch, I., & Guthrie, J. The concept and measurement of functional literacy. Reading Research Quarterly, 1977-78, 13(4), 485-507.

This article is an up-to-date review of the literature on the concept and measurement of functional literacy. The authors differentiate the various meanings applied to the term functional literacy and their implications for its definition and measurement. Various measures used in past surveys to assess functional literacy are critically examined and specific limitations of each approach are discussed.

Peck, C., & Kling, M. Adult literacy in the Seventies: Its definition and measurement. Journal of Reading, 1977, 20(8), 677-682.

After summarizing definitions and estimates of functional literacy/illiteracy that emerged from several major studies, this article critically examines several instruments developed to assess functional literacy levels. Special attention is given to the assessment of real-life reading skills. The article concludes by noting that any definition and assessment is relevant only to a given subpopulation rather than the U.S. as a whole.

Smith, L. L. Literacy: Definitions and implications. Language Arts, 1977, 54(2), 135-138.

Although somewhat uncritically presented, this article provides a lay-oriented summary of the literature on issues involved in defining functional literacy. Based on identification of these issues, the author, apparently without further justification, outlines the elements needed in any definition of functional literacy.

Additional Readings

Dauzat, S. V., & Dauzat, J. Literacy: In quest of a definition. Convergence, 1977, 10(1), 37-41.

Nickse, R. S. Development of a performance assessment system for the Central New York External High School Diploma Program: A progress report. Syracuse, NY: Regional Learning Service, 1975.

III. ADULT LITERACY EDUCATION: ALTERNATIVES

Introduction

As shown in the preceding chapter, many definitions have been applied to the concept of functional literacy. This chapter looks at various approaches that have been used to teach literacy to adult students. We consider first Adult Basic Education (ABE) and other approaches used in the United States. Then we look at some approaches taken to literacy education in developing nations. Finally we examine non-formal approaches to teaching literacy stemming from the work of Paulo Freire. As we shall see, a truly "functional" approach requires a change in focus and the development of new methods and curricula for teaching occupationally and socially oriented uses of literacy.

Approaches to Literacy Education in the U.S.

Hunter, C., with Harman, D. Adult literacy in the United States. New York: McGraw-Hill Book Co., 1979.

Chapter III of this comprehensive and up-to-date review looks at examples of various programs operating in the U. S. The authors are concerned that programs function "not in terms of broad social goals, but as instruments to enable participants to achieve more limited objectives." The programs are separated into three categories: (1) tutoring and basic education conducted by voluntary organizations, the ABE program, Right to Read and by other institutional programs, (2) competency-based programs, such as those used by the military, labor unions, ethnic organizations and the New York State Division for Youth; and (3) programs which use radio and television to deliver educational services. The authors offer thoughtful discussion and critical analysis of these programs.

Chapter IV offers a series of both general and specific recommendations for improving literacy programs. The principal conclusion of this work is the need for "a major shift in national educational needs of disadvantaged adults." The authors' major recommendation is: "the establishment of new, pluralistic, community-based initiatives whose specific objectives will be to serve the most disadvantaged hard-core poor, the bulk of whom never enroll in any existing program."

Traditional ABE. Traditionally, functional literacy has been defined in terms of grade level attainment or equivalencies--adults below a specified grade reading level are considered functionally illiterate. The majority of Adult Basic Education programs in the United States have been designed to enable the student to obtain some type of high school equivalency diploma. Most of these ABE classes have followed traditional classroom teaching techniques. Generally, there have been three levels of ABE classes offered to students: Level I (grades 0 - 3), Level II (grades 4 - 6), and Level III (grades 7 and up). Curriculum content has focused mainly on general education needs, rather than on specific job-related literacy needs. This traditional ABE focus has reflected the fact that program funding has been geared toward low-income groups and has assumed that a high school diploma is necessary for suitable employment. Recently, however, national recognition has been given to the need for a wider array of adult education services. An excellent historical overview of adult education in the United States is found in the monograph, Adult Literacy Education in the U.S., by Wanda Cook (1977). The Last Gamble on Education, by Mezirow, Darkenwald & Knox (1975), describes the state of the art in ABE programs and also considers legislative efforts to change the focus of ABE.

Cook, W. D. Adult literacy education in the U.S. Newark, DE: International Reading Association, 1977.

In this historical review of U.S. adult literacy education from 1900 to 1970, Cook discusses each decade in terms of the social climate, legislation, specific programs, methods, and materials that were in operation at the time. Literacy statistics for each decade are also presented. Through consideration of these variables, educational decisions can be seen with greater insight. Two interesting notes: (1) governmental concern with literacy arose mainly during times of national conflict, and (2) the standards for literacy were raised during these periods.

Mezirow, J., Darkenwald, G. G., & Knox, A. B. Last gamble on education: Dynamics of Adult Basic Education. Washington, D.C.: Adult Education Association of the U.S.A., 1975.

The two-year research project reported here was designed to analyze effective urban ABE practices that might be implemented on a larger scale. Data collected included (1) bi-weekly observations of 59 ABE classes, and (2) a questionnaire survey of 118 program administrations and 1,900 ABE teachers. Results of the survey are summarized according to the most effective classroom techniques, teachers, and approaches to instruction. The most effective approaches have minimal capacity for student failure, are individualized, and are adaptable to student needs. An ABE student profile indicates why students enroll in programs; most see it as the "last chance" to improve their situation. Teacher sensitivity to individual adult needs is also noted as important. Hints are given about how to publicize, set up, and administer ABE programs. The authors recommend that future research should be directed at developing alternative literacy methods and that liaisons should exist among a variety of community resources.

Alternate Approaches. ABE programs with innovative functional approaches have been implemented in some areas. Two of these are the New York State Diploma Plan (see Alamprese, 1978) and the Adult Competency Education Project conducted in California (see Cooney, 1978). Research in the California project defined competencies and curriculum in a manner that has not been utilized before.

Alamprese, J. A. The New York State External High School Diploma Program: An impact analysis. Syracuse, N.Y.: Syracuse Research Corporation, 1978.

This paper presents an overview of the External High School Diploma Program's assessment system, which provides adults with the opportunity to earn a high school diploma through the demonstration of adult life skill competencies. Also reported is the impact that participation in this program has had on the graduates' occupational and educational goals, as well as on their self-image.

Cooney, J. The Adult Competency Education Project: An experimental Adult Basic Education demonstration project. Final report. Redwood City, CA: San Mateo County Office of Education, 1978.

Faced with high dropout rates in GED programs, the Adult Competency Education Project (ACE) sought to provide a more relevant curriculum with the hope of retaining more students. The new approach redefined basic skills in terms of job-related tasks and developed instructional programs based on job goals. Counseling was provided to assist the student to determine skills needed and to understand

why these skills were needed to obtain employment. Thus, a link was established between schooling and on-the-job functioning. The project analyzed 70 jobs through on-site observations and interviews to establish the required math and communication skills and the context in which they were used. Competency was defined in relation to (1) a real-world task, (2) a measurable instructional objective, and (3) a real-world test task. The report presents the objectives of the project, the work conducted, and the results. Frank observations are made about the shortcomings and limitations of the effort, the main caution being that broad generalizations cannot be drawn from the specific variables examined.

Roth, E. APL: A ferment in education. American Education, May 1976, 6-9.

This article is a general non-technical overview of a variety of competency-based adult education programs, alternatives to the more traditional GED and ABE-styled programs. Particular emphasis is placed on the New York State External Diploma Program (see Alamprese, 1978), the most fully developed of the programs considered in the article. The development of interest in these programs is linked to findings of the APL study of the functional competence of American adults (see Northcutt, 1975a), although no information is given about how particular programs developed their objectives and curricula from the APL study. The article stresses the affective significance of becoming functionally literate.

Volunteerism. The services of volunteer organizations in promoting literacy should not be overlooked. Oriented more toward relatively low levels of literacy, volunteer organizations generally teach basic reading skills on a one-to-one basis. Library services have been employed in some projects both to provide reading material of interest to adults with low reading ability and to conduct surveys of the reading needs of the communities they serve. The two major volunteer organizations discussed here are Laubach (see Stauffer, 1973) and Literacy Volunteers of America.

Burrowes, C. A look at LVA. Literacy Advance, Fall 1977. (Quarterly publication of the National Affiliation for Literacy Advance)

The author briefly describes the Literacy Volunteers of America (LVA) materials and techniques used in its volunteer tutor program. One technique asks the student to relate an experience from his or her past, which the tutor puts in written form and teaches the student to read. Sight reading, phonics, and use of patterned words are other teaching strategies employed. Contrasts are made between the Laubach and LVA teaching methods, one main difference being

Laubach's emphasis on phonics. Descriptions of LVA technical assistance and correctional institution programs are also included.

Literacy Volunteers of America, Inc. (LVA). Summary of an evaluation study of The Literacy Volunteers of America, Inc. Program. Mimeo, Sept. 1978. Syracuse, NY: Literacy Volunteers of America, Inc. (a)

This flyer presents a brief summary of an evaluation conducted to determine the effectiveness of an LVA tutor program for 140 students. In addition to examining reading gains, the evaluation sought to determine the effect of the program on students and tutors in qualitative terms and validate the LVA READ test against the Adult Basic Learning Examination (ABLE) test. Average grade-level gains reported after 35 hours of instruction were: word recognition (1.05), reading comprehension (1.01), listening comprehension (.64). Over half of the participants reported positive attitudes about the program and planned to continue studies. Twelve percent planned to enroll in job training courses. The greatest benefit felt by students (23 percent) was that they could now read and write letters better. However, the READ and ABLE validation results showed only a moderate degree of correlation.

Literacy Volunteers of America, Inc. (LVA). Literacy volunteers in criminal justice. Mimeo, October 6, 1978. Syracuse, NY: Literacy Volunteers of America, Inc. (b)

Here Literacy Volunteers of America briefly describes its effort to teach reading skills to inmates in correctional institutions. With funding from a research grant, VISTA volunteers administered the one-year program. A needs assessment revealed that 25-50 percent of the inmates read below the 5th grade level and many were unable to read prison bulletins, flyers, letters from home, etc. During the program, inmates were used as tutors in most cases. Independent evaluation results showed average grade-level gains of 1.06 in word recognition, 1.00 in reading comprehension, and .47 in listening comprehension after 23 hours of instruction. The READ test was used to evaluate literacy gains on a pre/post basis. Over half of the students expressed a positive attitude toward the training and felt better prepared for the world "outside" when released from prison.

Stauffer, J. Illiteracy in the United States: The move to voluntarism. Literacy Discussion, 1973, 4(3), 251-283.

The article reviews a study of the volunteer outreach literacy instruction implemented by Laubach, Inc. Demographic profiles are reported for both students and volunteer tutors. One interesting finding is that demographic differences between students and tutors had no bearing on program effectiveness. Comparatively low dropout rates were reported (25 percent). Survey data reported some of the reasons students wanted to participate; over 75 percent cited general self-improvement, job-related reasons, or the need for effective communication skills. The ABLE test was administered on a pre/post basis and results were analyzed across a variety of demographic variables. Significant numbers of students improved their reading comprehension as a result of the tutoring.

Literacy Approaches in Developing Nations

Third World countries have attempted to increase their literacy rates rapidly by using a functional or work-oriented approach. This type of pedagogical approach is often chosen after earlier, more traditional efforts have failed. One alleged difficulty of traditional methods is their failure to orient literacy education to practical everyday uses. The most successful new programs were those whose goals were integrated with national development aims. We first look at UNESCO's efforts in the Experimental World Literacy Program (EWLP). Then we consider two studies which assess adults' retention of skills developed in functional literacy programs. Finally, articles describing successful functional literacy programs are discussed.

The Experimental World Literacy Program. The EWLP was the largest international effort ever implemented to attack illiteracy. Aiming to explore the relationship between literacy and development, pilot projects using a work-oriented approach to teaching literacy were established in 11 Third World countries. As an experiment, the EWLP campaign was problematic. Many projects used traditional instructional methods to teach a functional curriculum. Furthermore, grade level equivalencies were often used to define functional literacy. The EWLP experience as a whole suggests that "functionality" must be framed in broader than merely economic terms--all aspects of the individual's milieu should be considered when designing a literacy program.

The first article described here provides a brief overview of the EWLP. A critical analysis of the Program's shortcomings is given in Harman's article. Haemmerli offers an evaluator's perspective on the EWLP. A theoretical view of the Program's pedagogical strategies is described in the Practical Guide.

Why 800 million still cannot read or write: EWLP report makes critical assessment. Convergence, 1975, 8(4), 11-13.

The UNESCO publication "Final Global Evaluation Report of the Experimental World Literacy Programme (EWLP): Lessons Learned from 11 Projects" is examined. The concept of functionality (emphasizing economic development over political, cultural, and social development) is found to be inadequate as a basis for literacy programming. It is concluded that factors impinging on development of the learner's milieu should be addressed in literacy programs.

Harman, D. Review of The Experimental World Literacy Program: A critical assessment. Compiled by the Secretariats of UNESCO and UNDP. Paris: UNESCO Press, 1976.

The author reviews the EWLP and the conclusions drawn about the mass literacy effort in this final evaluation report. He feels the report side-stepped several major questions raised by the Program's failure and overlooked significant conclusions about promising practices and adult learning styles that could be drawn from some individual projects.

Haemmerli, A. R. Evaluation in the World Experimental Literacy Program. Literacy Discussion, 1974, 5(3), 329-350.

As an EWLP evaluator Haemmerli reflects on the problems encountered in planning and implementing the large-scale assessment of the Program. He also includes background information about the point of view of UNESCO and what it hoped to learn from the effort. The author frankly admits the shortcomings of the evaluation effort and discusses the difficulties encountered. One difficulty was conflict among developers over which approach (i.e., cultural or a strictly economic one) to take. Poor organization and planning of the overall effort, as well as high turnover among evaluation personnel, are other difficulties mentioned. This article is intended to rebut criticisms of the evaluation report.

UNESCO. Practical guide to functional literacy: A method of training for development. Paris: UNESCO, 1973.

This guide is a synthesis of the Experimental World Literacy Program and the lessons learned from its successes and failures. As such, it provides the reader with a survey of functional literacy methodology. The guide offers help with two basic problems: how to develop a pedagogical strategy adapted to the aims of a particular development program and how to implement the strategy.

The guide presents a theoretical overview of the Experimental World Literacy Program, then considers the philosophical bases of the various strategies, and examines some concrete examples of how they were applied in particular sites. The importance of giving constant consideration to the characteristics of the milieu in selecting and applying a pedagogical strategy is one of the major conclusions drawn out of the EWLP experience.

Oxenham, J. Non-formal education approaches to teaching literacy (Program of Study in Non-Formal Education, Supplementary Series Paper, No. 2). Washington, DC: Agency for International Development, 1975. (ERIC Document Reproduction Service No. ED 110 711)

This is a somewhat uncritical discussion of several UNESCO projects on adult learning styles and effective teaching methods. Some of the conclusions drawn are: (1) Adults learn to read and compute mathematics faster than children, but learning rates for writing are negligible; (2) adults prefer group learning situations; and (3) whereas adult learners who need literacy training are more persevering, literacy does not need to be directly related to the learner's specific purposes. While these conclusions are not substantiated empirically, the author feels they should be incorporated in adult literacy program designs.

Retention of Literacy Skills. Retention of skills learned has always been a significant problem in literacy programs. Lack of retention is one of the major factors often said to limit the impact of traditional programs on illiteracy rates. Simply learning to read and write may mean little to individuals if they are unable to apply their skills productively. And when skills are not applied or practiced they deteriorate. A basic premise in functional literacy programs is that students' literacy skills continue to develop through their application to everyday situations.

Few empirical studies, however, have compared the retention rates of students in traditional and functional literacy programs. Two such studies are included here. The Izadi article compares retention rates from two programs in Iran; the Sheffield article does the same cross-nationally.

Izadi, K. Retention of literacy in functional and traditional programmes. Literacy Work, 1977-78, 6(4), 51-62.

This article reports an in-depth study of the retention of participants' skills in traditional and functional literacy programs in Iran. Care was taken to control background variables between the groups tested. Although participants in both programs gradually lost some literacy skills that had been learned, less decline was observed among those trained in functional literacy programs than in traditional programs.

Sheffield, J. R. Retention of literacy and basic skills: A review of the literature. Mimeo, June 1977. New York: Teachers College, Columbia University. (Available from the Functional Literacy Project, Northwest Regional Educational Laboratory)

This paper reviews cross-national research on the retention of literacy and numeracy. After a brief discussion of definitions of literacy and retention, the report focuses on major findings for primary age children and adults in various literacy programs. Some of the conclusions drawn are: Adults learn faster than children but retain less; the amount of previous schooling positively affects retention; and receptivity for literacy in the family background and social milieu positively affects literacy retention. Retention studies in the U.S. revealed that intensive, short courses are better than longer ones; post-training employment was the factor most positively affecting subsequent retention; numeracy retention was not related either to length of schooling or time since education was completed. An annotated bibliography of the studies reviewed is included.

Program Descriptions. The programs described here were selected because they appear to have been relatively successful. Although diverse pedagogical strategies were employed in these functional literacy programs, several factors are common to them all, including (1) strong conceptual bases underlying program structure; (2) close coordination of implementation procedures with development of materials; (3) supportive governmental mechanisms, particularly financial, personnel, and organizational commitments; and (4) well designed follow-up efforts. Two of the most successful projects (Tanzania and Cuba) were developed as part of broad programs of social reform, in which adult education played a vital role in fostering citizens' acceptance of the reform measures.

Cairns, J. MOBRAL--the Brazilian literacy movement: A first-hand appraisal. Convergence, 1975, 8(2), 12-23.

In the context of UNESCO's Experimental World Literacy Program (EWLP), the author describes why MOBRAL succeeded when most EWLP projects failed. One of the reasons claimed for its success is that MOBRAL is a national foundation, well financed by a variety of sources, with a strong implementation structure. Functional literacy is an integral component of MOBRAL and is viewed as the first step in a lifelong education process. Retention of newly learned skills is enhanced by a supportive literacy environment. Follow-up programs

include special libraries, publications, newsletters and cultural centers designed so that neo-literates may use their newly acquired skills and continue their studies.

While illiteracy has been reduced substantially, other major problems must be overcome if the program is to succeed completely. Students must see the benefit of literacy training. In rural areas, literacy must be highly integrated with general development to prevent massive rural-urban migration of literates. Although in urban areas special job placement centers have been established to help new literates find work, their success in finding employment is highly dependent upon the state of the Brazilian economy.

Furter, P. Possibilities and limitations of functional literacy: The Iranian experiment (Educational Studies and Documents, No. 9). Paris: UNESCO, 1973. (ERIC Document Reproduction Service No. ED 094 243)

This study describes the work-oriented adult literacy project in Iran. The aims of this EWLP-sponsored pilot project, an evaluation of its first measurable results, and an examination of the problems encountered trying to extend functional literacy from the privileged to the entire population are described. The problems experienced in functional literacy training and in attempting to utilize human resources more completely are discussed in terms of how non-educational factors influence educational action. Questions are raised about future developments, the concept of lifelong adult education, and the international implictions of the Iranian experiment.

Kinunda, M. J. Experience in Tanzania in identifying and satisfying local needs in education (International Institute for Educational Planning Seminar Paper, No. 14). Paris: UNESCO, 1975. (ERIC Document Reproduction Service No. ED 133 859)

At independence, Tanzania inherited a highly illiterate population. Based upon the success of the EWLP pilot project (see Viscusi, 1971), the government developed a comprehensive 5-year plan to eradicate illiteracy. The success of the campaign is attributed to the fact that educational goals were closely integrated with national development plans and the government gave total support to the literacy effort. The functional literacy campaign provided basic skills and knowledge needed by local communities and the curriculum reflected the economic livelihood of the area. To achieve the goal of permanent literacy, education centers were established in every community linking all types of education. Admininstration was decentralized and student participation was encouraged to determine the literacy needs of local areas. Primary teachers were required to teach literacy classes each year, and specialists and volunteers from a variety of sources participated in the campaign.

Kozol, J. A new look at the literacy campaign in Cuba. Harvard Educational Review, 1978, 48(3), 341-377.

The author traces the history and documents the success of the 1961 Cuban literacy campaign in which more than 700,000 out of 1,000,000 illiterates reportedly learned to read and write in less

than one year. Outlining the immense logistical and pedagogical challenges facing this program, the author describes the total mobilization effort of the Cuban government which included: (1) recruitment and training of 95,000 volunteers of all ages who lived and worked with the families they taught, (2) production of the primers used, (3) vision and general medical checkups which resulted in dispensing 150,000 pairs of glasses, and (4) providing release time for teachers and other literate workers to assist volunteers at the height of the campaign. Although some critics have described the Cuban methods as being extraordinarily political, Kozol effectively rebuts such challenges. Substantiated results are astounding: Cuban illiteracy was reduced from 20 percent to less than 5 percent in 9 months. Follow-up reports are even more remarkable: Of the 707,212 adults who became literate during the initial campaign, 500,000 continued studies and passed sixth grade qualification by 1968; more than 30,000 have enrolled in university classes.

Viscusi, M. Literacy for working: Functional literacy in rural Tanzania (Educational Studies and Documents, No. 5). Paris: UNESCO, 1971.

This is an excellent description of the EWLP pilot project in Tanzania. Calling the effort "literacy for working," five pilot sites were established in which a work-oriented approach was taken to teaching literacy. Some specific features of the campaign were: (1) meshing of project goals with national needs; (2) detailed plans for program development and evaluation; (3) consideration of many aspects of the individual's environment; (4) tailor-made curricula, varying with each site's requirements; and (5) non-formal teaching methods instead of traditional classroom techniques.

Freire's Approach to Teaching Literacy

This section centers around the work of Paulo Freire. The concepts he brought to the teaching of literacy mark a bold path for educators to follow. The ultimate question posed by Freire is "Who shall benefit from an education?" In his concept of "conscientization," Freire identifies the learner as the chief beneficiary. Conscientization calls for learners to become critically conscious of their environment and how, through common action, it can be changed to meet their needs. Literacy is thus defined in terms of individuals' felt needs and literacy training becomes a form of social action in which the learners determine course content. For Freire, education is a dynamic, cultural act--a humanization process that spreads as individuals grow.

Questions have been raised about how to implement Freire-inspired programs in the U.S. Articles in this section describe Freire's educational philosophy, its implications for adult education in the U.S. and a few projects that have tried to implement Freire-inspired literacy programs. Highly recommended articles are those by Lloyd and Starratt which present perceptive views of Freire's philosophy and its significance for U.S. adult education programs.

Freire, P. The adult literacy process as cultural action for freedom. Harvard Educational Review, 1970, 40(2), 205-225.

Although Freire writes from a Third World perspective, his ideas have implications for education everywhere. Mechanistic conceptions of the adult literacy process are replaced by a theory and practice based upon genuine communication between teachers and learners about the learners' existential situations. Such dialogues promote both the acquisition of literacy and the awareness of the learners' potential to transform reality to better meet their needs. Becoming literate means more than learning to decode the written representation of a sound system. It is an act of knowing, through which a person is able to look critically at the culture which has shaped him and to move toward reflection and positive action upon his world.

Lloyd, A. S. Freire, conscientization, and adult education. Adult Education, 1972, 23(1), 3-20.

This thoughtful paper focuses on two contrasting approaches to adult education: (1) Freire's concept of conscientization, and (2) the typical approach of American adult educators to social change. The author concludes that conscientization is necessary for a democratic education and that, in general, it is not considered part of American adult education programs or philosophy.

Starratt, R. J. On Paulo Freire and the reform movement. National Elementary Principal, 1973, 52(6), 28-30.

Starratt provides a perceptive sketch of Freire's work and its meaning for the American educational system. In his opinion, the challenge presented by Freire to U.S. schools is to teach an ideology of liberation that will eventually lead to social awareness and a more humanistic approach to literacy training in both the U.S. and abroad.

Chain, B. C. An examination of three Paulo Freire-inspired programs of literacy education in Latin America. Literacy Discussion, 1974, 5(3), 393-408.

Bolivia, Guatemala, and Honduras developed adult literacy programs inspired by Freire's philosophy of education. The successes

and failures in reaching stated goals are examined critically. The author concludes that the failures were due to poor teacher training and lack of inventiveness in creating an atmosphere conducive to open discussion.

Wagner, S. Literacy and citizenship--the experiment of Carrefour ("Crossroads") Pointe St. Charles Community Education. Literacy Discussion, 1974, 5(4), 559-572.

This is a poignant description of a program whose teachers recognized the ineffectiveness of their approach to teaching marginal literates. The teachers went on to question their traditional view of the role literacy has in the lives of their students. Instead of fostering self-reliance, the initial program assumed a paternalistic posture towards its students and created dependency. Radical changes and restructuring of the curriculum were required to create a more liberating environment for the learner. Traditional classroom methods were scrapped in favor of those that covered real life problems and situations faced by the student.

Additional Readings

Adiseshiah, M. S. Functionalities of literacy. In L. Bataille (Ed.), A turning point for literacy: Adult education for development: The spirit and declaration of Persepolis. Oxford: Pergamon Books, 1976.

The Adult Basic Education program: Progress in reducing illiteracy and improvements needed. General Accounting Office Report to Congress. Washington, D. C.: U.S. Office of Education, 1975.

Berggren, C., & Berggren, L. The literacy process: A practice in domestication or liberation. London: Writers and Readers Publishing Cooperative, 1975.

Cortwright, R., & Brice, E. W. Adult basic education. In R. M. Smith, G. F. Aker, & J. R. Kidd (Eds.), Handbook of adult education. New York: Macmillan, 1970.

Ford, D., & Nicholson, E. Adult basic reading instruction in the United States: An annotated bibliography (IRA Annotated Bibliography, 15). Newark, DE.: International Reading Association, 1967. (ERIC Document Reproduction Service No. ED 017 832)

Freire, P. Education for critical consciousness. New York: The Seabury Press, 1973.

Freire, P. Pedagogy in progress: The letters to Guinea-Bissau. New York: The Seabury Press, 1978.

Freire, P. Pedagogy of the oppressed. New York: The Seabury Press, 1970.

Griffith, W. S. Paulo Freire: Utopian perspective on literacy education for revolution. In S. M. Grabowski (Ed.), Paulo Freire: A revolutionary dilemma for the adult educator. Syracuse, NY: Publications in Continuing Education and ERIC Clearinghouse on Adult Education, 1972.

Griffith, W. S., & Hayes, A. P. (Eds.). Adult Basic Education: The state of the art. Chicago: Department of Education, University of Chicago, 1970.

Harman, D. Community fundamental education: A nonformal educational strategy for development. Lexington, MA: Lexington Books, D. C. Heath, 1974.

Knox, A. B. Adult development and learning. San Francisco: Jossey-Bass, 1977.

Kozol, J. Children of the revolultion. New York: Delacorte Press, 1978.

Lyman, H. H. Literacy and the nation's libraries. Chicago: American Library Association, 1977.

Roy, P. & Kapoor, J. M. The retention of literacy. Delhi: Macmillan Co. of India, 1975.

Srinivasan, L. Perspectives in nonformal adult education. New York: World Education, 1977.

The Secretariats of UNESCO and the UN Development Programme. The Experimental World Literacy Program: A critical assessment. Paris: UNESCO Press, 1976.

Weber, R. Adult illiteracy in the U. S. In J. B. Carroll & J. S. Chall (Eds.), Toward a literate society: A report from the National Academy of Education. New York: McGraw-Hill, 1975.

IV. DETERMINING LITERACY REQUIREMENTS: CRITICAL ISSUES

Introduction

So far, we have looked at the various operational definitions that have been applied to functional literacy and at programs that have attempted to implement a functional approach to teaching literacy. If effective literacy training programs are to be developed for children and adults, more knowledge is needed about the specific reading requirements of jobs and a variety of everyday activities. One of the problems educators face in designing a functional curriculum is that the literacy requirements of the real "everyday" world are not known.

The critical questions in determining functional literacy requirements concern whether individuals' reading, writing and computational skills are adequate to meet their personal, occupational or social needs. As easy as such questions are to ask, they have proved notoriously difficult to answer in generally acceptable or meaningful terms. Individuals differ greatly not only in their mastery of particular literacy skills, but also in their everyday needs for such skills. Occupational and social demands for literacy skills are heterogeneous: people engage in a variety of tasks across different environments, and literacy skills are deployed in variable ways as part of these diverse activities.

This chapter considers some sources which examine the functions of literacy in various occupational or social activities. The first section identifies some research conducted to determine the literacy requirements of selected occupational settings. The first section is divided into two parts: One part examines studies of the actual reading demands of selected

jobs; the second part mentions a few efforts to develop categories of generic skills and occupational taxonomies that might be applicable across a variety of jobs. The second section of the chapter focuses on studies of individuals' literacy needs in day-to-day activities. And the third discusses the use of ethnographic methods in studying literacy in specific social settings and activities.

Occupational Literacy Requirements

On-the-job Reading Tasks. Much of the research conducted on literacy requirements of particular jobs has been sponsored by the Department of Defense. Historically, during times of crisis, the Armed Services have lowered entrance literacy requirements to meet personnel demands and, as a result, admitted large numbers of recruits who were marginally literate. Recruiting tests revealed that a gap existed between grade level attainment of some recruits and the literacy skills required for practical, on-the-job tasks. Faced with this situation, the Army became interested in fostering "functional literacy" during World War II and through research determined that at least a fifth grade education was necessary to be functionally literate in the Army.

Military manpower shortages brought on by the Vietnam conflict in the 1960s again resulted in the lowering of entrance standards for recruits. With the lowering of literacy requirements the Armed Services again admitted a large number of recruits with low literacy abilities. New remedial programs were needed to train these recruits to participate effectively in assigned activities. To fulfill this need, the Human Resources Research Organization conducted a series of research projects over roughly a ten-year period to (1) develop methodologies for determining literacy requirements of military jobs, (2) explore techniques for

reducing reading demands of jobs, and (3) develop a prototype functional literacy training program appropriate for meeting minimal job requirements.

Sticht, T. G. (Ed.). Reading for working: A functional literacy anthology. Alexandria, VA: Human Resources Research Organization, 1975.

This anthology considers several dimensions of adult literacy in the functional context of job performance--determining the actual literacy requirements of specific jobs and tasks, reducing the literacy demands of jobs to meet the literacy skills of personnel, and literacy related aspects of job-training and career education. Of special interest here is Part I of the volume, consisting of five chapters on various methods for determining the functional literacy demands of jobs. Four principal methods are described: (1) using objective procedures to determine the readability (or difficulty) of the reading materials used on the job; (2) developing job reading task tests to assess literacy components of job performance, (3) assessing literacy concurrently with job knowledge, job performance, and supervisor ratings; and (4) using personnel data files to estimate reading demands of jobs. Critical analyses and comparisons of these methods and their associated problems are provided. This material is carefully written, well organized, and raises a number of critical issues for subsequent research on functional literacy. References to the more detailed but less accessible technical reports are provided for those interested in further information about the research.

Sticht, T. G., & Zapf, D. W. (Eds.). Reading and readability research in the Armed Services. Alexandria, VA: Human Resources Research Organization, September 1976.

This is a somewhat longer and more technical summary of the Human Resources Research Organization's functional literacy work conducted for the Armed Services. It is readily available through the ERIC system (ED 130 242) and may be a useful reference for some readers. Several of its chapters are particularly relevant to the present topic. The overview article by Sticht ("Literacy Training in the Armed Services"), the article by Caylor ("Ongoing R & D in Army Literacy Training"), and the one by Duffy ("Literacy Research in the Navy") cover much of the material discussed above in the Reading for Working volume.

Sticht, T. G., & McFann, H. H. Reading requirements for career entry. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education. Newark, DE: International Reading Association, 1975.

This brief article presents a lucid, concise summary of the various methods which have been used to determine and specify the literacy requirements of jobs. The principal methods described above

in the Reading for Working volume are included as well as methods described below in the Canadian work (see Smith, 1975).

Sticht, T. G., Caylor, J. S., Kern, R. P., & Fox, L. C. Project REALISTIC: Determination of adult functional literacy skill levels. Reading Research Quarterly, 1972, 7(3), 424-65.

This is a long description of a Human Resources Research Organization project to determine functional literacy skill levels for selected military jobs. Although this article overlaps partially in content with other selections, its detailed treatment of topics makes it worthwhile reading. Extensive data are reported which clarify important relationships among individuals' literacy skills, the readability of written materials, and patterns of usage for the materials. Also, detailed analyses of relationships among general literacy skills, job reading performance, and overall job performance are presented.

Sticht, T. G. Comprehending reading at work. In M. Just & P. Carpenter (Eds.), Cognitive processes in comprehension. Hillsdale, NJ: Erlbaum, 1977.

This article presents an overview of the Human Resources Research Organization's functional literacy work from the perspective of cognitive psychology and information processing. Particularly important in this work are Sticht's attempts to differentiate the psychology of reading according to the purpose of the reading activity. A major division Sticht identifies in breaking reading down into functional categories is "reading-to-learn" versus "reading-to-do."

Generic and Transferable Skills Approaches. The Human Resources Research Organization's research on functional literacy, conceptualized and directed by Sticht, concentrated on the reading demands of specified jobs within highly constrained contexts--specific military settings, occupations, materials, and personnel. As Sticht himself has pointed out, the methods and findings that emerged from the work may be difficult if not impossible to generalize to other important social and occupational contexts of functional literacy.

Other researchers have attempted to investigate the literacy requirements of diverse jobs, occupations, and social activities. These approaches have been directed towards taxonomic specification of the activities in which literacy is used. Because the corresponding analyses

tend to abstract literacy skills from the actual circumstances in which people use them, unwarranted generalizations about referent populations, tasks, and materials may occur. Further research is needed to clarify the limitations and ambiguities inherent in these studies.

Two research groups have made major efforts to develop taxonomic specifications of literacy requirements applicable to broad cross-sections of occupations. One group, based in Canada and under the direction of Arthur Smith, has compiled a taxonomy of generic skills in the areas of mathematics, communications, reasoning, and interpersonal relations.

Smith, A. De W. Generic skills for occupational training. Saskatoon, Sask., Canada: Saskatchewan NewStart for the Training Research and Development Station, 1973.

> A taxonomy of generic skills was developed on the premise that every occupation requires a worker to function in relation to three things: data (informational input/functions of job, etc.); people (interpersonal and managerial skills, etc.); and things (tools, implements, etc.). Generic skills are defined as those which are fundamental to the performance of many tasks and subtasks carried out in a wide range of occupations. A study of 27 occupations was conducted to identify their generic skills. Information was collected through interviews and observations of workers, supervisors and employers from diverse backgrounds. Generic skill requirements for each occupation surveyed were determined from identifiable clusters of skill requirements which generalize across different workplace locations. Where possible, anomalies between job requirements and the content of occupational training courses are identified.

A second research group, based at the National Center for Research in Vocational Education, has been investigating transferability of vocational skills. As in the Generic Skills Project cited above (see Smith, 1975), the major research approaches being used are taxonomic. Efforts are directed at identifying the component skills or behaviors of tasks which are common to a broad array of jobs and occupations. Many functional literacy skills are elements of the taxonomies being developed by the

Transferable Skills Project. No attempt has been made to assess the functional significance of literacy skills in particular tasks or occupations, however (as HumRRO attempted). But this project, like the Generic Skills Project, does try to identify literacy (and other basic skill) requirements of numerous occupations, primarily through compiling and analyzing summary task statements, one of the methods used by Sticht's group. For discussion and comparison of this method with other available methods, see Sticht (1975, 1977) above.

The project has published numerous reports. Among those most closely related to the analysis of the functional literacy requirements of occupational roles are the following:

Pratzner, F. C. Occupational adaptability and transferable skills: Project final report (Information Series No. 129). Columbus, OH: The Ohio State University Center for Vocational Education, January, 1978.

This document summarizes the substance of earlier Transferable Skills Project reports and attempts to weave together some conclusions. Of particular interest is the discussion of the definitional and conceptual problems underlying the notions of "skill" and "transfer."

Ashley, L., & Ammerman, H. L. Identifying transferable skills: A task classification approach (Research and Development Series No. 146). Columbus, OH: The Ohio State University Center for Vocational Education, February 1978.

One of the difficulties experienced in trying to understand movement between occupations is a lack of knowledge about the relationships among occupations. This study explored the usefulness of several alternative task classification schemes for identifying inter-job relationships based on skill requirements and the relationship between workers' vocational skills and occupational mobility. Limitations of this approach are presented as well as recommendations for future research efforts.

Literacy Requirements of Social Activities

There have been several different approaches to determining the literacy requirements for effective participation in society as a whole or in particular activities. A taxonomic approach was developed by Northcutt and colleagues as part of the Adult Performance Level project (APL). They attempted to determine the functional competencies (which include functional literacy skills) needed for "successful" performance on a set of tasks considered essential for American adults. Some of the conceptual problems in using this approach are discussed critically in the Griffith and Cervero paper. An analysis of the literacy demands of a more circumscribed set of tasks--dealing with the welfare bureaucracy--is presented in the Bendick and Cantu article. An in-depth study of basic skills used in an industrial town is described in the Hall and Carlton monograph. A different approach--finding out what kinds of reading tasks American adults engage in--is described in the Murphy and Sharon articles. The Mann bibliography provides further references to studies of what adults read with special reference to literacy studies from the United Kingdom.

Northcutt, N. Adult Performance Level Project: Adult functional competency: A report to the Office of Education Dissemination Review Panel. Austin: University of Texas, Division of Extension, 1975. (a)

The Adult Performance Level Project (APL) was a major study designed to "specify the competencies which are functional to economic and educational success in today's society and to develop devices for assessing those competencies in the adult population of the U.S." The APL Project defined functional competency (a broader construct than functional literacy) as the application of a set of four skills to a set of five content areas. Test items for each skill-by-content area combination were selected in terms of their ability to discriminate "successful" American adults (operationally, those with relatively high levels of income, education, and occupational prestige) from non-"successful" adults. Although this study has been widely disseminated among adult educators and has been the basis for recent curriculum developments, many question the measures of competency and the indicators of "success" used in the survey.

Northcutt, N. W. Functional literacy for adults. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education (Perspectives in Reading No. 19). Newark, DE: International Reading Association, 1975. (b)

The author summarizes the Adult Performance Level Project (see Northcutt, 1975a), conducted to assess functional competency among U.S. adults and describes the theoretical framework the project used to study functional competency. The research methodology employed to conduct and interpret the data collected as well as selected survey results are presented. The article concludes that many more U.S. adults are functionally incompetent than originally believed.

Griffith, W. A., & Cervero, R. M. The Adult Performance Level Program: A serious and deliberate examination. Adult Education, 1977, 27(4), 209-224.

This article examines the claims of the developers of the Adult Performance Level Project (see Northcutt, 1975a & b). Theoretical problems with the initial research approach that have been overlooked previously are examined. The authors raise a number of technical problems in the assessment and measurement procedures used. Several claimed "results" of the APL Project, on close examination, turn out to be initial assumptions made about the nature of "functional competence" and "success," which have no established empirical or theoretical validity. Especially important are hidden value judgments inherent in the APL framework that are often unnoticed by disseminators and proponents of the approach.

Hall, O., & Carlton, R. Basic skills at school and work. Toronto: Ontario Economic Council, 197[illegible].

Using a "community study" approach, the authors describe their intensive investigation of the basic skills learned and used in a variety of settings in an industrial town. The study concentrated on the relationships between the development of individuals' basic skills and the situational demands of the work and academic settings in which they participate. Data were collected, by direct observation and from interviews, from members of several relevant sections of the community: students and teachers from elementary schools, secondary schools, community colleges, and universities, as well as employees entering work from secondary school and their prospective employers. "Basic" levels of skills were not defined in advance. Instead, the researchers elicited and systematically analyzed a wide variety of perspectives about skills needed for effective functioning in selected academic and work settings. Particular attention was focused on how employers determine the basic skills required for particular jobs, how they determine whether prospective employees have those skills, and what factors enable both employers and employees to cope with lower levels of proficiency.

Bendick, M., Jr., & Cantu, M. G. The literacy of welfare clients. Social Service Review, March 1978, 56-68.

One frequently cited "survival level" of literacy is the ability to deal effectively with the bureaucratic forms which increasingly penetrate our lives. Low income families--who include a disproportionately high number of marginal literates--are eligible for a variety of benefits under needs-tested assistance programs. Access to these benefits is established and maintained by processes drawing on literacy skills: filling out forms, documenting eligibility, comprehending explanatory brochures, and complying with written regulations.

This paper addresses several major questions about the functions and effects of literacy in meeting the needs of welfare clients: What literacy skills can be assumed of welfare clients? (How) do administrative procedures accommodate the gap between the limited literacy skills of some clients and those required by the agencies? The research concludes that high administrative error rates in provision of welfare benefits are due in part to literacy problems.

Murphy, R. T. Assessment of adult reading competence. In D. M. Nielsen & H. F. Hjelm (Eds.), Reading and career education (Perspectives in Reading No. 19). Newark, DE: International Reading Association, 1975.

The author presents a summary of the Adult Functional Reading Study (see Murphy, 1973) conducted to determine (1) reading habits of U.S. adults and (2) assessment of functional reading skills based on daily reading tasks. Murphy points out the importance of determining characteristics of the actual reading tasks in which adults engage before attempting to assess functional literacy. While the study did not provide standards for measuring functional literacy, it does provide data for future research in the area.

Sharon, A. T. What do adults read? Reading Research Quarterly, 1973-74, 9(2), 148-169.

Based on the premise that literacy cannot be defined or measured without knowing exactly what people read, this article summarizes the results of a national survey conducted to determine characteristics of adult reading habits. The study was one of the first major surveys that looked at the role and importance of reading in the context of everyday activities.

Mann, M. The reading habits of adults: A select annotated bibliography. London: British Library Board, 1977.

This bibliography can be used to find helpful trails into a scattered literature about adult reading habits. This compact volume also provides a bridge between American, British and other studies of literacy. The citations are arranged topically: reading habits in general; reading habits in historical perspective; the change from child to adult reading competency; reading research; reading and other media; general surveys of the United Kingdom, America and other countries; special group surveys; and newspapers and magazines.

Use of Ethnographic Methods

The articles listed above provide a sample of various approaches which have been used to research the functional literacy requirements of occupational and social activities. Although highly situation-specific work has been done in the occupational realm (e.g., by Sticht and colleagues), few attempts have been made to assess the literacy demands for participation in other types of social settings or activities. Nor is it clear how such research can be conducted. Sticht himself has pointed out the difficulties of extending his methods beyond the work-oriented military settings in which his research was conducted. Other methods may be needed, and most likely, multi-method approaches will be required.

Ethnographic research methods, developed by cultural anthropologists, are receiving increasing attention as potential ways of studying the functional significance of literacy in particular settings and activities. The articles cited below by Szwed, by Heath, and by Basso provide valuable suggestions about how to investigate, through the use of ethnographic approaches, the significance of literacy in particular social contexts and activities. Articles in the Goody volume provide examples of ethnographic approaches to literacy in societies markedly different from our own. A challenge for future research, however, will be to develop methods for applying ethnographic techniques to the study of literacy in our society and for determining literacy requirements of specific activities.

Szwed, J. F. The ethnography of literacy. In M. F. Whiteman (Ed.), Variation in writing: Functional and linguistic-cultural approaches. Hillsdale, NJ: Lawrence Erlbaum Associates, in press.

Szwed provides some provocative examples of uses of literacy in our society which effectively challenge stereotyped notions of the basic nature of literacy. He then argues that an adequate understanding of the nature of literacy and related educational issues

requires an ethnography of literacy in American society. The departure point for such an ethnographic investigation is the fundamental question of "What are reading and writing for?" That is, we must determine the "social meaning" of literacy. Important questions for such ethnographies include determining what it is that people read and write, why they read and write those particular materials, and under what circumstances such reading and writing takes place. In addition, Szwed suggests a number of researchable subtopics and some applicable research methods to use in such investigations.

Heath, S. B. Ethnography in education: Toward defining the essentials. In P. Gilmore & A. Glatthorn (Eds.), Ethnography and education: Children in and out of schools. Philadelphia: University of Pennsylvania Press, in press.

After sketching the history of the anthropological study of education, Heath considers some of the general requisites of ethnographic work in education. She then considers in detail the essentials of ethnographic research on literacy. Using numerous examples--some drawn directly from her own work and research experiences--Heath focuses on the essential methods, issues, and goals for community-based literacy studies. She advocates that community members, whether from schools or factories, share actively in investigating their own settings. She also provides a list of questions the researcher should ask about the written materials used in a setting.

Basso, K. H. The ethnography of writing. In R. Bauman & J. Sherzer (Eds.), Explorations in the ethnography of speaking. Cambridge: Cambridge University Press, 1974.

Ethnographies of communication have generally overlooked literacy practices in modern societies. Basso here tries to sketch what an ethnography of writing might look like, and in so doing, provides some useful methodological suggestions for studying writing. Basso draws on ethnographic concerns and techniques developed for the study of speech to propose some tentative categories of written materials and of reading and writing activities.

Goody, J. (Ed.). Literacy in traditional societies. Cambridge: Cambridge University Press, 1968.

This volume presents a collection of case studies of the diverse roles and functions of literacy in numerous traditional societies. Although few of the articles directly relate to literacy as practiced in contemporary industrialized societies, the material helps to sensitize the reader to the diverse ways in which literacy is incorporated into patterns of life. Appreciation of these varied patterns of literacy enhances our awareness of the many ways literacy functions in our own society. These chapters also illustrate clearly both the power and the limitations of ethnographic and ethnohistorical inquiry for specifying the role of written materials in particular social and economic activities.

Sherzer, J. The ethnography of speaking. In R. W. Shuy (Ed.), Linguistic theory: What can it say about reading? Newark, DE: International Reading Association, 1977.

This article introduces the reader to the basic concepts of the ethnography of speaking. Sherzer defines it as an "approach to language and speech which studies language use in cultural and social contexts." The speech community, defined in terms of age, sex, socioeconomic status, ethnic affiliations and other factors, is the unit of analysis for the social meanings which language usage carries within a group or society. The ethnographer of speech looks at verbal behavior as part of a holistic pattern of social behavior. The basic research task is to describe not only the community's rules of language (or grammar), but also its rules of speaking, that is, the acts, events and situations which support the use (or non-use) of particular forms of speech. Sherzer's ethnographic approach provides important methods for studying communication in the context of social interaction. He discusses how this approach can be used to study not only speech, but also the acquisition and use of literacy.

McDermott, R. P. The ethnography of speaking and reading. In R. W. Shuy (Ed.), Linguistic theory: What can it say about reading? Newark, DE: International Reading Association, 1977.

This article reports an ethnographic study of classroom reading instruction in an elementary school. McDermott concludes that social relations between teachers and students "are the key to understanding who learns what in the classroom, and that the ways teachers and students talk to one another in classrooms is a key to understanding who learns to read." Although this study specifically examined only reading instruction in the first grade, its methods and general conclusions are of general interest. McDermott's work provides a powerful example of how the ethnography of communication can be applied to the analysis of literacy.

Additional Readings

Gray, W. S., & Munroe, R. The reading interests and habits of adults. New York: Macmillan, 1930.

Hoggart, R. The uses of literacy: Aspects of working-class life, with special reference to publications and entertainments. London: Chatto & Windus, 1957.

McDermott, R. P. Achieving school failure: An anthropological approach to illiteracy and social stratification. In G. D. Spindler (Ed.), Education and cultural process: Toward an anthropology of education. New York: Holt, Rinehart and Winston, 1974.

Ziegler, W. L. Who benefits from illiteracy? A radical critique of the client society. Paper presented at a Symposium on Adult Functional Literacy, National Conference on Social Welfare, 104th Annual Forum, 1977.

V. CONSEQUENCES OF LITERACY: WHAT DIFFERENCE DOES IT MAKE?

Introduction

An important topic in literacy policy focuses on the consequences of literacy. To a considerable extent, adult literacy policy in the United States has been shaped by popular belief in the great "literacy myth": Continued social and economic progress requires more and more literacy. Certainly much of our past progress has been closely tied to the development of literacy. But, given the increasing use of and reliance on electronic media, does it follow that future social and economic advance depends critically on every adult being literate? Perhaps nonliterate individuals could function just as effectively as their literate counterparts if given the opportunity to perform vital tasks using other media. To the extent such exchange is possible, reduction of the literacy requirements of various activities becomes a viable alternative to increases in individuals' literacy skills. Such a tradeoff presupposes that there is no inherent benefit in having written institutions and practices, as opposed to those based on other media. But many people assert that there are important consequences attached specifically to use of writing. Some scholars have suggested, for example, that our intellectual development depends critically on acquisition and use of written language.

These issues cannot be resolved without more information about the effects of literacy. Unfortunately, little research has been conducted on the matter. Nor is it easy to collect data which can unambiguously expand our knowledge about these issues. The references listed below discuss these issues and report what little research has been done to date.

There are many dimensions of potential effects of literacy and illiteracy. The annotations below are divided into two sections. The first section deals with the general social and economic effects, and the second with the cognitive or intellectual effects of literacy.

Social and Economic Effects of Literacy

An important question concerns the economic impact of literacy: Does continued economic development require continued increases in adult literacy? Part of our "literacy myth," of course, is that increases in literacy do expand individuals' employment opportunities and potentiate economic development. There is ample data showing positive correlations between literacy levels and economic status in numerous societies, including our own. But such correlations, of course, do not establish that literacy is a causal factor in economic development. The Young and Jamison article explores the potential economic benefits of increases in adult literacy in the United States. Using multiple-regression techniques, they extrapolate existing relationships among individuals' levels of education, literacy, employment and earnings (among other variables considered) to a hypothetical case in which all adults' literacy is raised to a prescribed minimum level. With this procedure, they estimate the potential economic benefits of a compensatory adult literacy program. They assume not only that the hypothetical objectives of such a program are attainable (an assumption which they themselves question), but also that literacy is a driving or causal factor in the development chain.

Other research challenges the notion that literacy is a causal factor in development. The second chapter of Harman's book offers a concise review of cross-national research conducted on the economic effects of

literacy. Two of the major studies, by Cipolla and Blaug, are also annotated below. This research seems to indicate that literacy is not necessarily a critical factor in economic development.

Readers interested in the general social effects of literacy are advised to consult the Disch volume for a broad, high-level introduction. The seminal Goody and Watt article, which we have had occasion to annotate several places in this Guide, is a provocative and insightful essay. Gough's article helps place Goody and Watt's generalizations into a comparative perspective. Goody's (1968) article reconsiders the position taken earlier by Goody and Watt (1963) about the general consequences of literacy. Impressed by the varied cultural contexts of literacy found in other societies (especially that covered by Gough, 1968), Goody's "Introduction" to Literacy in Traditional Societies relativizes the consequences of literacy to numerous other factors. Like the earlier Goody and Watt paper, this is a thoughtful, even provocative article.

Harman, D. Community fundamental education. Lexington, MA: D. C. Heath, 1974.

Chapter 2 of Harman's volume, "Literacy and Development," gives a concise review of the literature on cross-national studies of the effects of literacy on various measures of economic development. Harman concludes from the research he reviews that there is no overall causal relation between literacy levels per se and economic development. In some cases, literacy appears to lead development, whereas in others it does not. In general, literacy should not be assumed to operate in isolation from other factors as a stimulus for development.

Cipolla, C. Literacy and development in the West. London: Penguin Books, 1969.

This is a fascinating account of the historical development of literacy, primarily in Europe. Cipolla, an economic historian, provides diverse cross-national data, from which can be shown that there is little systematic correlation between literacy levels and economic development.

Blaug, M. Literacy and economic development. The School Review, 1966, 74, 394-418.

This article also looks at cross-national studies of the relationship between literacy and development. Blaug refutes the popular notion that literacy by itself is a panacea for economic development, and offers a more insightful conclusion: "While literacy may not always cure poverty, affluence always eradicates illiteracy."

Young, K-H. & Jamison, D. The economic benefits of schooling and reading. In R. T. Murphy, Supplement to Final Report, Adult Functional Literacy Project. (PR 75-2). Princeton, NJ: Educational Testing Service, 1975.

The authors attempt to assess the economic benefits of educational attainment and functional literacy, using employment and earnings as dependent variables. Data collected during the National Reading Performance Survey (see Sharon, 1972 and Murphy, 1973) were analyzed. The data set, collected from a national probability sample of adults 16 years of age or older, included basic demographic variables, employment and earnings data, educational attainment, and measures of functional reading competence from individuals' performance on test items.

Using multiple-regression techniques, the authors derive the expected employment and earnings benefits from increases in schooling and reading proficiency. The economic benefits of raising the adult population's reading proficiency to specified levels are also calculated, from which is estimated the potential economic impact of compensatory adult literacy education. Particularly interesting are apparent differences in the expected benefits according to sex and race. The authors emphasize, however, that the objectives of the compensatory programs are hypothetical and may well be infeasible to achieve.

Disch, R. (Ed.). The future of literacy. Englewood Cliffs, NJ: Prentice-Hall, 1973.

This is a well-edited anthology of selections from previously published material, arranged in several major sections: "The Impact of Literacy," "The Crisis of Literacy," and "The Future: Literacy and the Media." Of particular interest here are the sections on "The Impact of Literacy," considering the historical significance of writing, and "The Future: Literacy and the Media," consisting of speculative essays offering contrasting views of the future significance of literacy, given the ascendency of non-print media. In addition to the selections from numerous authors, the reader may find Disch's own commentary and introduction very helpful. This is recommended as a high-level introduction to these issues.

Goody, J., & Watt, I. The consequences of literacy. Comparative Studies in Society and History, 1963, 5, 304-345. Reprinted in J. Goody (Ed.), Literacy in traditional societies. Cambridge: Cambridge University Press, 1968.

In this far-ranging essay, Goody and Watt link literacy with profound social change. The changes in the technology of communication and information storage made possible by literacy stimulated profound changes in all aspects of society. Although the authors consider the consequences of literacy primarily for the case of classical Greece, they suggest that the same pattern of effects appears elsewhere.

Gough, K. Implications of literacy in traditional China and India. In J. Goody (Ed.), Literacy in traditional societies. Cambridge: Cambridge University Press, 1968.

Gough's article is written in rebuttal to Goody and Watt's speculations about the general consequences of literacy (see Goody and Watt, 1963). Several important social and political developments in classical Greece, which Goody and Watt had speculated were universal consequences of literacy, failed to materialize in either or both of the cases considered here: traditional India and China.

Gough concludes that the effects of literacy are best thought of in terms of the "implications" rather than the "consequences" of writing. Literacy, in general, seems to be an "enabling" factor, a necessary but not a sufficient condition for certain developments. Gough concludes that "whether, or with what emphases, these developments will occur seems to depend less on the intrinsic knowledge of writing than on the overall development of the society's technology and social structure."

Goody, J. Introduction. In J. Goody (Ed.), Literacy in traditional societies. Cambridge: Cambridge University Press, 1968.

In response to the diverse cultural patterns exhibited by articles describing different cases of literacy in traditional societies, Goody reconsiders and weakens the claims made earlier by Goody and Watt (1963) about the consequences of literacy. He recasts the earlier conclusions, generally along the lines recommended by Gough (1968). If literacy occurs in a certain context, then it may have predictable consequences. But developments so tied to literacy in one case may arise independently of it in another.

Cognitive Consequences of Literacy

Does general intellectual development depend on acquisition and use of written language, as many people believe? If certain aspects of cognitive development indeed are associated with literacy, can use of other communicative media also stimulate the same kinds of mental development?

The work by Havelock and by Goody and colleagues--some of which we have considered earlier--is primarily concerned with the historical role of literacy in general societal development. Their work does identify some major cognitive consequences of literacy, but the claims are based only on speculative analysis of remote historical phenomena. Work by Olson and by Greenfield appears to go a step further by adducing direct empirical support--based on experimental studies in contemporary populations--for major cognitive effects of literacy. The work by Scribner and Cole, however, challenges the conclusions drawn by these researchers. They offer a penetrating analysis of the conceptual and methodological difficulties involved in identifying the intellectual consequences of literacy. Efforts made towards overcoming some of these difficulties in their own research are reported.

Havelock, E. A. Origins of Western literacy. Toronto: The Ontario Institute for Studies in Education, 1976.

In tracing the impact of literacy on the historical and intellectual development of Western culture, Havelock speculates about the cognitive consequences of literacy. Once the Greeks developed an "efficient" writing system (i.e., one in which written messages could be rapidly and accurately scanned as linguistic material), substantial change in human communication took place. As the technology of writing improved, readership increased and "novel statements" (i.e., those which were previously unknown to the reader) could be incorporated into written materials and be reliably understood by the reading public. Prior to this, Havelock argues, written messages served only as recall cues for previously memorized information. Thus, as literacy spread, it progressively "freed" the human mind from the burden of memorizing all important information. The "mental energies" thereby released, according to Havelock, were then available for new modes of inquiry and analysis. The production of novel or unexpected statements, made possible by literacy, in turn encouraged the development of novel ideas, upon which the advance of all human and scientific knowledge depends.

Goody, J., & Watt, I. The consequences of literacy. Comparative Studies in Society and History, 1963, 5, 304-345. Reprinted in J. Goody (Ed.), Literacy in traditional societies. Cambridge: Cambridge University Press, 1968.

Goody and Watt are among the first scholars to inquire explicitly about the consequences of literacy. Although their inquiry is primarily a speculative analysis of historical phenomena, they link literacy causally with profound psychological as well as social change. Using ancient Greece as a case study, they argue that the relatively widespread adoption of literacy had pervasive effects on Greek culture (and, by implication, on numerous other Western societies which later adopted the Greek model of literacy). Although Goody and Watt discuss numerous consequences of literacy, they stress its impact on the development of logic and history as new modes of inquiry and analysis. The objectification of language made possible by writing is critical in this account. Writing not only demands an analytical treatment of language, but, by objectifying speech, enables human contemplation and analysis, as it were, to turn upon itself and create knowledge of a new order.

Olson, D. R. The languages of instruction: The literate bias of schooling. In R. C. Anderson, R. J. Spiro, & W. E. Montague (Eds.), Schooling and the acquisition of knowledge. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 1977.

In this piece Olson analyzes the distinctive properties of human knowledge and intellectual competence associated with the acquisition of literacy. The advent of literacy leads to a specialization in the functions of language served by oral "utterances" and written "texts." Once literacy develops, speech is specialized for rhetorical functions, for coordinating practical actions and for transmitting "common sense" knowledge. Writing, in contrast, is specialized for logical functions, for formulating objective truth and for transmitting scientific knowledge. Each mode of language use is associated with its own "picture" of reality; knowledge is not perfectly translatable between "utterance" and "text"--each introduces a characteristic bias. In our society the literate functions of language and the picture of reality they transmit are highly valued and are the officially established means of representing and disputing information. Literate uses of written text provide the only route to certain forms of intellectual achievement, and their mastery may be critical for effective functioning in any highly bureaucratic society. But because writing is so valuable as a logical and scientific tool, there has been a strong tendency to underestimate the bias it places upon knowledge and learning and to devalue other systems and modes of transmitting knowledge. "Text" is the predominant language of instruction, not necessarily because it is superior for all purposes, but because it reflects the overall literate bias of the larger society.

Olson, D. R., & Hildyard, A. Literacy and the specialization of language: Some aspects of the comprehension and thought processes of literate and non literate children and adults. In N. Warren (Ed.), Cross-cultural studies in psychology, vol. 2. London: Academic Press, 1978.

This paper continues Olson's discussion of the critical role literacy plays in the development of language functions (see the preceding annotation). Of special interest in this paper is a series of experiments conducted by Olson and Hildyard to test the predictions

of Olson's theory about the developmental consequences of becoming literate. Systematic comparisons are made between the performance of young children and adults on a number of experimental tasks requiring the use of specific functions of language. Results reported are consistent with Olson's emerging theory.

Greenfield, P. Oral and written language: The consequences for cognitive development in Africa, the United States, and England. Language and Speech, 1972, 15, 169-178.

The author suggests that acquisition of written language has major cognitive consequences. Individuals who master a written language represent and communicate knowledge in fundamentally different ways. Use of written language is associated with relatively abstract, context-independent patterns of thought and communication. Greenfield conducted some experimental work among the Wolof in Senegal to test her ideas. She compared the performance of groups of literate, formally educated children with nonliterate (but also unschooled) children of comparable age on several experimental tasks. Performance differences observed between the groups and differences in their patterns of language use are attributed to one group's literacy.

Vygotsky, L. S. The prehistory of written speech. In L. S. Vygotsky, [Mind in society: The development of higher psychological processes] (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press, 1978.

This essay, part of a collection of previously untranslated works by Vygotsky, places the acquisition of literacy as a central event in the overall scheme of cognitive development. Vygotsky demonstrates that writing has its own developmental roots, independent of speech, within the gestural and graphic activities of the developing child. As these protoliterate activities come into close behavioral contact with speech, literacy develops and becomes intertwined with language and other pre-existent behavioral systems. The mastery of written language adds a new system of mental representation, and thereby brings about major cognitive change.

Scribner, S., & Cole, M. Unpackaging literacy. In M. F. Whiteman (Ed.), Variation in writing: Functional and linguistic-cultural differences. Hillsdale, NJ: Lawrence Erlbaum Associates, in press.

Scribner, S., & Cole, M. Literacy without schooling: Testing for intellectual effects. Harvard Educational Review, 1978, 48(4), 448-461.

In these articles Scribner and Cole consider some conceptual and methodological problems in identifying the cognitive consequences of literacy. The main lines of evidence which scholars have used to document the consequences of literacy are reviewed critically. In most cases, discussions of the effects of literacy have been based on analyses of historical and cultural phenomena (e.g., the works of Havelock and Goody). Scribner and Cole consider several problems in extrapolating from those analyses to speculations about the cognitive effects of literacy on the contemporary individual. Cross-cultural

comparisons of literate and preliterate societies usually confound literacy with covarying phenomena, such as the presence of formal schooling, industrialization, or general economic development, making inferences about the social determinants of individuals' cognitive abilities problematic. Also, even if the advent of literacy did effect specific cognitive changes at one time in history, it does not follow that those cognitive effects continue to depend on acquisition of literacy today. An individual raised in a highly literate society may not need to be personally engaged with written materials in order to develop "literate" modes of thought.

The authors also critically examine more direct attempts to determine the intellectual consequences of literacy. Cognitive psychologists have compared the performance of literate and nonliterate groups on experimental tasks thought to measure certain intellectual skills. Although experimental studies conducted by both Olson and Greenfield (see annotations above) found systematic differences between literate and nonliterate groups in selected tasks, Scribner and Cole question their attribution of the observed differences to the effects of literacy. In Greenfield's work, literacy differences in the population were confounded with schooling, whereas in Olson's work, comparisons made between nonliterate children and literate adults confound literacy with both age and education.

Scribner and Cole then describe their research among the Vai, a West African tribe in which literacy is practiced in three different languages, each with a different writing system, context of learning, and pattern of functional uses. Because some adults are not literate in any script and others are literate in one or more of the writing systems, Scribner and Cole were able to make a number of interesting comparisons. They found no general cognitive effects of being literate. On the contrary, their research uncovered highly specific effects of literacy. Effects of literacy in a particular script were observed only on experimental tasks which were highly similar to activities in which the given script was normally used.

The specificity of their results lead Scribner and Cole to emphasize the need for systematic analyses of the component skills of various literacy activities in our own society (in real-world as well as school settings). If, indeed, the effects of literacy reflect the character of the activities in which writing is used, then literacy educators may need to tailor curricula and pedagogy to characteristics of anticipated uses of script.

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HELP!

We plan to revise this Guide from time to time. Your feedback, comments and suggestions would be very helpful and much appreciated. This page can be used as a self-addressed, postpaid mailer.

Are there materials we have omitted which should be included in a revised version?

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